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Attorney File No. A1031-US-NP



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application No.: 10/024,242

Confirmation No: 3336

Filed: 12/21/2002

Group: 2863

Applicant: John D. Sotack

Examiner: Aditya S. Bhat

Title: COMPONENT FAULT DETECTION

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

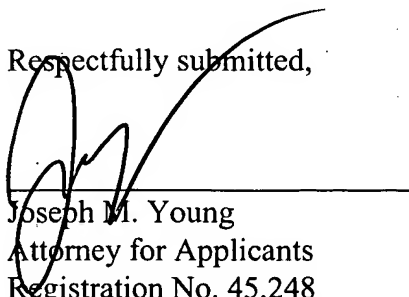
Sir:

LETTER

Enclosed herewith is an original and two copies of Appellants' Brief on Appeal in the above-identified application.

Please charge any fees associated with the filing of the Brief on Appeal to Xerox Corporation, Deposit Account No. 24-0025. Two duplicate copies of this letter are enclosed.

Respectfully submitted,

  
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U.S. Appln. No. 10/024,242

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PATENT APPLICATION

FILE NO. A1031-US-NP

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE  
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

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JOHN D. SOTACK

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Application for Patent

Application No.:	10/024,242	:	Examiner:	Aditya S. Bhat
Filed:	12/21/2002	:	Art Unit:	2863

COMPONENT FAULT DETECTION

BRIEF ON APPEAL

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**1. REAL PARTY IN INTEREST:**

Xerox Corporation, assignee of the present patent application.

**2. RELATED APPEALS AND INTERFERENCES:**

None.

**3. STATUS OF CLAIMS:**

Claims 1 to 21 are rejected.

**4. STATUS OF AMENDMENTS:**

Appellant's Amendment After Final Rejection dated 22 January 2004 was not entered by the Examiner.

**5. SUMMARY OF INVENTION:**

In embodiments, an onboard microprocessor selectively monitors a group of components that includes a particular component by sensing a characteristic of the particular component, such as current drawn by the group. To determine whether the component was operating properly, the microprocessor would sense current drawn by the group when, for example, the component was the only component operating. The onboard microprocessor would compare the current drawn by the group to a reference current value indicative of proper operation and store the results in a memory such as, for example, the RAM of the microprocessor. The data can remain in the memory for later retrieval or can be

uploaded to another location, such as a main controller or to non-volatile memory, such as a hard drive. [Specification, Paragraph 6]

Embodiments can recursively employ this technique to monitor systems, subsystems, and subgroupings within subsystems on down to individual components, depending on the particular configuration of the machine in which embodiments are employed and the particular resolution desired. [Specification, Paragraph 7]

The system main controller can obtain a history of aberrant component events, such as aberrant motor encoder events, or could even obtain histories of multiple components, subsystems, and systems in the machine. When a predetermined threshold of events is reached, for example, the machine diagnostics could alert service that a failure is eminent. Further, service could access this data, locally or remotely, and determine if further repairs are needed. [Specification, Paragraph 10]

**6. ISSUE:**

Were claims 1-21 properly rejected under 35 USC § 102(b) as being anticipated by U.S. Patent 5,887,216 to Motoyama (the '216 patent)?

**7. GROUPING OF CLAIMS:**

The rejected claims do not stand or fall together. Appellant will discuss distinctions between all of the appealed claims and the cited references.

Claims 1, 4, 7, 12, 13, 15, and 17 stand or fall together.

Claims 2, 3, and 14 stand or fall together.

Claim 5 stands or falls alone.

Claims 6 and 16 stand or fall together.

Claim 8 and 9 stand or fall together.

Claims 10 and 18 stand or fall together.

Claim 11 stands or falls alone.

Claim 19 stands or falls alone.

Claim 20 stands or falls alone.

Claim 21 stands or falls alone

**8. ARGUMENT:**

**Claim Rejections - 35 USC § 102**

Claims 1-21 were improperly rejected under 35 USC § 102(b) as being anticipated by U.S. Patent 5,887,216 to Motoyama (the '216 patent).

**Claims 1, 4, 7, 12, 13, and 17**

In claim 1, Appellant recites an aberrant component detection method that includes storing a reference current indicative of proper functioning of a particular component in a computer memory, sensing current supplied to a group of components including the particular component, comparing the current supplied to the group of components to the reference current, and recording a result of comparing the current to the reference current.

In claim 12, Appellant recites an aberrant component detection method. The method includes recording a result of comparing a sensed current to a reference current, the sensed current being supplied to a group of components including the particular component, the reference current being indicative of proper functioning of a particular component and being stored in a computer memory.

The Examiner should withdraw the rejection to claims 1 and 12, as the Examiner has failed to establish that either claim is anticipated by the '216 patent. The Examiner has failed to establish that the '216 patent anticipates either claim 1 or claim 12 because the Examiner has not shown that the '216 patent discloses all the elements of either claim. Specifically, the Examiner has not, for example, shown that the '216 patent discloses storing a reference current in memory.

A rejection under 35 U.S.C. § 102 can only be supported if each element is literally present in a single piece of prior art. Even if the prior art device performs all the functions recited in the claim, the prior art cannot anticipate the claim if there is any structural difference. MPEP Anticipation under 35 U.S.C. § 102(e) requires that "each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." Verdegaal Bros., Inc. v. Union Oil Co., 814 F.2d 628, 631, 2 U.S.P.Q.2D (BNA) 1051, 1053 (Fed. Cir. 1987). This rule was reinforced recently by In re Robertson, 169 F.3d 743, 745, 49 USPQ2d 1949, 1951 (Fed. Cir. 1999). In Robertson, the claims were drawn to a disposable diaper having three fastening elements. The reference disclosed two fastening elements that could perform the same function as the three fastening elements in the claims. The court construed the claims to require three separate elements and held that the reference did not disclose a separate third fastening element, either expressly or inherently. As in Robertson, the Examiner



cannot support an assertion of anticipation unless the prior art shows all the claimed limitations.

The '216 patent discloses a method and system for determining that problems exist in a business office device by analyzing the user settings of the business office device. If the user settings deviate from the default settings by a predetermined amount, there is a probability that the default settings are improper, parameters need to be changed within the business office device, or defective components within the business office device need to be changed. The analysis of the user settings is triggered after a predetermined time period expires, after a predetermined number of jobs are performed, or alternatively after a predetermined combination of jobs and elapsed time occurs.

The Examiner has not shown that the prior art discloses, for example, storing a reference current indicative of proper functioning of a particular component in a computer memory. The Examiner asserts that this limitation is shown in FIG. 3 of the '216 patent. The Examiner further asserts that because the '216 patent discloses a method and system for determining that problems exist in a business office device based upon user-set parameters, it would be inherent "to use different current levels in order to detect problems with the system." However, other than these bald assertions, the Examiner has provided no evidence or reasoning to support his position. The Examiner must provide rationale or evidence tending to show inherency. MPEP 2112. "To establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a

given set of circumstances is not sufficient.' " Robertson. The abstract appears to indicate that the '216 patent focuses on comparing user settings to the default settings of the device. The Examiner has offered no rationale for assuming that storing a reference current in memory is inherent in the '216 patent and Appellant can see no reason why it would be.

The Examiner appears to have focused on perceived similarities of function between Appellant's claims and the disclosure of the '216 patent. However, as stated above with respect to Robertson, even if the prior art device performs all the functions recited in the claim, the prior art cannot anticipate the claim if there is any structural difference.

In fact, the Examiner has identified little in the way of corresponding structure in the '216 patent. Appellant recites (1) storing a reference current indicative of proper functioning of a particular component in a computer memory, (2) sensing current supplied to a group of components including the particular component, and (3) comparing the current supplied to the group of components to the reference current. The Examiner has pointed to no portion of the '216 patent that discloses storing a reference current. The Examiner has pointed to no portion of the '216 patent that discloses sensing current supplied to a group of components. Finally, the Examiner has not shown where Motoyama compares a reference current to a sensed current.

Further, the Examiner has not established Inherency simply because the components communicate with each other through electrical signals. The Examiner argues that because components communicate by current signals, comparison of current signals is inherent. However, electronic communications do

not provide the missing limitations from the '216 reference. Appellant claims comparing stored reference current of a particular component to a current supplied to a group of components and recording the result. That components in electronic devices communicate through electronic signals is irrelevant. Regardless of how components communicate within a system, the Examiner has not established that a comparison between a reference current and a current supplied to a group of components is inherent in the art. The abstract of the '216 reference itself explicitly describes comparing user settings to default settings, which is not what Appellant does. Appellant compares the current that should be passing through a group of components with the actual current flowing through that group of components to determine if a fault has occurred.

Further, communications, even if done through electronic signals are sent from one component to another. This process senses current drawn by a group of components.

As the Examiner has failed to identify structure corresponding to the limitations of either claim 1 or claim 12, the Board should overrule the Examiner and claims 1 and 12 should be allowed.

For each of the above reasons, claims 4, 7, 13, 15, and 17 should be allowed as claims 4 and 7 depend from claim 1, and claims 13, 15, and 17 depend from claim 12.

Claims 2, 3, and 14

Claim 2 includes all the limitations of claim 1 and further recites recording a result includes storing the result in a computer memory. Claim 3 further adds the limitation that the computer memory is nonvolatile

Claim 14 includes all the elements of claims 12 and 13 and adds the limitation that if a result is stored in computer memory it is stored in nonvolatile memory.

As noted with respect to claims 1 and 12, the Examiner has failed to establish that the '216 reference discloses recording a result of comparing a sensed current to a reference current. Please refer to the discussion of Robertson in response to the rejection of claims 1 and 12.

Further, the Examiner has not shown that the '216 patent discloses the step of storing a result of a comparison in nonvolatile computer memory. The Examiner cites FIG. 3 of the '216 patent as disclosing storing in a nonvolatile computer memory the result of a comparison of the reference current and the sensed current. FIG. 3 appears to simply disclose an apparatus including memory. The Examiner has not identified how this Figure anticipates the step of storing a result in nonvolatile computer memory and Appellant does not see it.

Therefore, the Board should overrule the Examiner and claims 2, 3, and 14 should be allowed.

Claim 5

Claim 5 includes all the elements of claim 1 and further recites that recording a result includes recording the circuit to which current was supplied during sensing.

As noted with respect to claims 1 and 12, the Examiner has failed to establish that the '216 reference discloses recording a result of comparing a sensed current to a reference current. Please refer to the discussion of Robertson in response to the rejection of claims 1 and 12.

Further, the Examiner has not shown that the '216 patent discloses recording the circuit to which current was applied during sensing. The Examiner asserts that lines 10-17 of column 11 of the '216 patent support his argument. This passage talks generally about storing information of machines and querying databases for information. The Examiner has not identified any passage that discusses recording a circuit. The Examiner has not identified how the '216 patent anticipates the step of recording a circuit and Appellant does not see it.

Therefore, the Board should overrule the Examiner and claim 5 should be allowed.

Claims 6 and 16

Claim 6 includes all the limitations of claim 1 and includes the further limitation that the step of sensing current is performed when only a particular component draws current.

Claim 16 includes all the limitations of claim 12 and includes the further limitation that the step of sensing current is performed when only a particular component draws current.

As noted with respect to claims 1 and 12, the Examiner has failed to establish that the '216 reference discloses recording a result of comparing a sensed current to a reference current. Please refer to the discussion of Robertson in response to the rejection of claims 1 and 12.

Further, the Examiner has not shown that the '216 patent discloses the step of sensing current is performed when only a particular component draws current. The Examiner asserts that lines 10-20 of column 10 of the '216 patent support his argument. Other than citing the passage, the Examiner provides no argument. Appellant fails to see how this passage can possibly support this limitation. The Examiner has not identified any passage that discusses sensing the current drawn when only a particular component draws current. The Examiner has not identified how the '216 patent anticipates this step and Appellant does not see it.

Therefore, the Board should overrule the Examiner and claims 6 and 16 should be allowed.

Claims 8 and 9

Claim 8 includes all the limitations of claim 7 and includes the further limitation that allowing access to recorded results includes providing a connection to and allowing access via a computer network.

Claim 9 adds the further limitation that the computer network is the Internet.

As noted with respect to claim 1, the Examiner has failed to establish that the '216 reference discloses recording a result of comparing a sensed current to a reference current. Please refer to the discussion of Robertson in response to the rejection of claims 1.

Further, the Examiner has not shown that the '216 patent discloses the added limitation that allowing access to recorded results includes providing a connection to and allowing access via a computer network such as the internet. The Examiner cites Column 4, lines 51 and 61-63 to support this proposition. These passages do not even come close to anticipating these claims. The passages talk respectively how the Internet is not considered to be secure and using a firewall to provide security between a firewall computer network and the Internet. At best an attempt could be made to use these passages to support a 35 U.S.C. § 103 rejection as a § 102 rejection must teach all the limitations of the claim including their cooperation with each other. However, combining elements within a rejection would require some motivation or suggestion that the Examiner has not provided. Regardless, the combination suggested by the Examiner still does not teach Appellant's invention.

Therefore, the Board should overrule the Examiner and claims 8 and 9 should be allowed.

Claims 10 and 18

Claim 10 includes all the limitations of claim 7 and includes the further limitation that allowing access to recorded results includes providing a user interface via an on-board display.

Claim 18 includes all the limitations of claim 17 and includes the further limitation that allowing access includes at least one of providing a connection to via a computer network, providing a user interface via an on-board display, and providing access via a computer connected to a direct-connect port.

As noted with respect to claims 1 and 12, the Examiner has failed to establish that the '216 reference discloses recording a result of comparing a sensed current to a reference current. Please refer to the discussion of Robertson in response to the rejection of claims 1 and 12.

Further, the Examiner has not shown that the '216 patent discloses the added limitation that allowing access to recorded results includes providing a user interface via an on-board display. The Examiner cites Column 8 lines 20-21 to support this rejection. This passage simply discloses an imaging interface. There is no description of a user accessing recorded results. The Examiner has not identified how the '216 patent anticipates the limitation of allowing access to recorded results includes providing a user interface via an on-board display and Appellant does not see it.

Therefore, the Board should overrule the Examiner and claims 10 and 18 should be allowed.



Claim 11

Claim 11 includes all the limitations of claim 7 and includes the further limitation that allowing access to recorded results includes providing a port, allowing connection of a computer to the port, and providing access with the connected computer to the stored results.

As noted with respect to claim 1, the Examiner has failed to establish that the '216 reference discloses recording a result of comparing a sensed current to a reference current. Please refer to the discussion of Robertson in response to the rejection of claims 1.

Further, the Examiner has not shown that the '216 patent discloses the added limitation that allowing access to recorded results includes providing a port, allowing connection of a computer to the port, and providing access with the connected computer to the stored results. The Examiner cites Column 5, Lines 30-40 to support his argument. This passage discusses using telephone or ISDN lines to connect a workstation to the machine having a database. The Examiner has not identified any passage that discusses providing a port, allowing connection of a computer to the port, and providing access with the connected computer to the recorded results of a comparison of two currents. The Examiner has not identified how the '216 patent anticipates this step and Appellant does not see it.

Therefore, the Board should overrule the Examiner and claim 11 should be allowed.

Claim 19

In claim 19, Appellant recites an aberrant component detection method. The method includes storing a reference current indicative of proper functioning of a particular component in a computer memory, sensing current supplied to a group of components including the particular component while only the particular component draws current, comparing the current supplied to the group of components to the reference current, and recording a result of comparing the current to the reference current. Recording a result comprises at least one of storing the result in a computer memory, displaying an alert when there is a discrepancy between the reference current and the current supplied to the group of components, and recording the circuit to which current was supplied during sensing.

Claim 19 includes all the elements of claims 12 and 13. This combination is not present in any of the other claims. It is Appellant's position that if the Board finds these other claims anticipated, this combination is not anticipated.

However, to avoid unnecessary repetition, Appellant directs the Board to the arguments made for claims 1, 4, 7, 12, 13, 15, and 17. For example, as noted with respect to claim 1, the Examiner has failed to establish that the '216 reference discloses any one of storing a reference current, sensing current supplied to a group of components, and comparing the reference current and the supplied current. In addition to each of the individual arguments previously made, the combination of elements in claim 19 has further novelty over the prior art.

Claim 20

Claim 20 includes all the limitations of claim 12 and 13 and further recites the step of allowing access to recorded results, wherein allowing access comprises at least one of providing a connection to and allowing access via a computer network, providing a user interface via an on-board display, and providing access via a computer connected to a direct-connect port.

Claim 20 includes all the elements of claims 12, 13, 17, and 18. This combination is not present in any of the other claims. It is Appellant's position that if the Board finds these other claims anticipated, this combination is not anticipated.

Claim 21

Claim 21 includes all the limitations of claim 19 and further recites that the particular component is itself a group of components and the method is applied recursively to identify an aberrant particular component within the particular component.

Appellant has already argued that the '216 patent does not disclose the elements of claims 12 and 13, which include the elements of claim 19.

Further, the Examiner has not shown that the '216 patent discloses that the particular component is itself a group of components and the method is applied recursively to identify an aberrant particular component within the particular component. The Examiner cites Column 1, lines 49-53 to support his argument. This passage discloses that the invention described therein is directed to the diagnosing of a business office device. A business office does contain other components. However, the Examiner has not identified any passage that discloses

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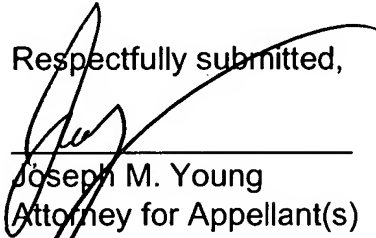
a recursive application of a method for detecting an aberrant component, nor does Appellant see one.

Therefore, the Board should overrule the Examiner and claim 21 should be allowed.

**CONCLUSION**

For the reasons set forth herein, Appellant is of the position that the claims of the present application are patentable with respect to the prior art cited by the Examiner, and accordingly respectfully requests that the Board of Patent Appeals and Interferences reverse the Examiner's rejections of the claims.

Respectfully submitted,



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9. APPENDIX:

CLAIMS APPEALED

1. (Original) An aberrant component detection method comprising:  
storing, in a computer memory, a reference current indicative of proper  
functioning of a particular component;  
sensing current supplied to a group of components including the  
particular component;  
comparing the current supplied to the group of components to the  
reference current; and  
recording a result of comparing the current to the reference current.
2. (Original) The method of claim 1 wherein recording a result  
comprises storing the result in a computer memory.
3. (Original) The method of claim 2 wherein the computer memory is  
non-volatile.
4. (Original) The method of claim 1 wherein recording a result  
comprises displaying an alert when there is a discrepancy between the  
reference current and the current supplied to the group of components.

5. (Original) The method of claim 1 wherein recording a result includes recording the circuit to which current was supplied during sensing.

6. (Original) The method of claim 1 wherein sensing current includes sensing while only the particular component draws current.

7. (Original) The method of claim 1 further comprising allowing access to recorded results.

8. (Original) The method of claim 7 wherein allowing access comprises providing a connection to and allowing access via a computer network.

9. (Original) The method of claim 8 wherein the computer network is the Internet.

10. (Original) The method of claim 7 wherein allowing access comprises providing a user interface via an on-board display.

11. (Original) The method of claim 7 wherein allowing access comprises providing a port, allowing connection of a computer to the port, and providing access with the connected computer to the stored results.

12. (Original) An aberrant component detection method comprising recording a result of comparing a sensed current to a reference current, the sensed current being supplied to a group of components including the particular component, the reference current being indicative of proper functioning of a particular component and being stored in a computer memory.

13. (Original) The method of claim 12 wherein recording a result comprises at least one of storing the result in a computer memory, displaying an alert when there is a discrepancy between the reference current and the current supplied to the group of components, and recording the circuit to which current was supplied during sensing.

14. (Original) The method of claim 13 wherein the result, if stored, is stored in a non-volatile computer memory.

15. (Original) The method of claim 12 wherein the computer memory is non-volatile.

16. (Original) The method of claim 12 wherein sensing current includes sensing while only the particular component draws current.

17. (Original) The method of claim 12 further comprising allowing access to recorded results.

18. (Original) The method of claim 17 wherein allowing access comprises at least one of providing a connection to via a computer network, providing a user interface via an on-board display, and providing access via a computer connected to a direct-connect port.

19. (Original) An aberrant component detection method comprising:  
storing, in a computer memory, a reference current indicative of proper functioning of a particular component;  
sensing current supplied to a group of components including the particular component while only the particular component draws current;



comparing the current supplied to the group of components to the reference current; and

recording a result of comparing the current to the reference current, wherein recording a result comprises at least one of storing the result in a computer memory, displaying an alert when there is a discrepancy between the reference current and the current supplied to the group of components, and recording the circuit to which current was supplied during sensing.

20. (Original) The method of claim 19 further comprising allowing access to recorded results, wherein allowing access comprises at least one of providing a connection to and allowing access via a computer network, providing a user interface via an on-board display, and providing access via a computer connected to a direct-connect port.

21. (Original) The method of claim 19 wherein the particular component is itself a group of components and the method is applied recursively to identify an aberrant particular component within the particular component.